

Developing Technology Training for Teachers Faculty and Students

Taha Mzoughi, Department of Physics and Astronomy, Mississippi State University, USA
mzoughi@ra.msstate.edu

Burnette Wolf Hamil, Department of Curriculum and Instruction, Mississippi State University, USA
bhamil@ra.msstate.edu

Abstract: As part of our PT3 grant we had to develop training programs for faculty, in-service teachers, and teacher candidates on the use of technology for teaching and learning. The diversity in needs and capabilities of the target audience made the task challenging. To be effective, the training activities had to be diverse in scope and content. We will use this paper to describe the methods that we have used to develop and conduct this type of training and the lessons that we have learned.

Introduction

Most educators agree that changes in technology have affected the way our students learn and that it is essential that we become skilled at using technology in our teaching. Unfortunately, many current teachers lack even the basic skills for operating a computer, let alone integrating the use of technology into their teaching. Our project, like many around the nation, aims to help alleviate this disparity. Knowing that teachers tend to teach the way they were taught [Britzman, 1991; Lortie, 1975], we have provided training to all three groups of teachers: teacher candidates, in-service mentor teachers, and education and content area faculty. The training focused on the use of technology and hands on science for teaching and learning.

Training

The diversity in needs and capabilities of the target audience for our training made the task challenging. To be effective, the training activities had to be diverse in scope and content. For instance, faculty were interested in receiving training about the use of computers for teaching, class and lecture preparation, class assignments, class management, research, and professional development. In-service teachers were more interested in learning how to use computers and other technology tools for in-class activities. Teacher candidates were more interested in learning how to develop lesson plans, web pages, electronic portfolios, and sophisticated presentations. The skills of our target audience varied from very basic to advanced.

Whenever possible, we have relied on already existing university resources for providing training. For instance, Assistive Technology training was provided by The Rehabilitation Research and Training Center on Blindness and Low Vision and the T. K. Martin Center for Technology and Disability. Some of the training on productivity tools and course management software was provided by Information Technology Services. Training on some instructional issues was provided by the Mitchell Memorial Library Instruction division.

Faculty Training

The trained faculty included members from the college of education as well as from the college of arts and sciences and from neighboring community colleges. We have provided training in the form of summer workshops with follow up meetings during the school year. The training included hands on activities and interactive collaborative sessions that allowed for exchanges between the trainees and between trainees and trainers. We have targeted basic skills as well as more advanced skills and strategies for classroom integration. These included productivity tools like Microsoft Word, Excel and PowerPoint; web technologies like search engines and making web pages, using Adobe Acrobat, and manipulating video and sound. The teaching strategies addressed include techniques for promoting active and collaborative learning, alternative assessment strategies, addressing plagiarism issues, copyrights and fair

use regulations, using web based activities for teaching and learning, and assistive technology. Furthermore, the workshops included a component about using course management software for teaching online and hybrid courses. Trainees were provided with time to practice what they had learned and were encouraged to work on preparing their course material. To ensure sustainability, the trained faculty were introduced to the various training resources available to them and to their students for free at the university.

Teacher Training

The teachers trained were elementary school teachers from the surrounding districts. The aim was to train teachers who have the potential to become mentors to teacher candidates. We have also provided the training in the form of summer workshops with follow up meetings during the school year. However, instead of concentrating on course management software and the related issues, the teacher workshops focused on using technology for running and conducting hands-on science experiments. These hands-on activities included GLOBE [GLOBE] and Project Learning Tree [PLT] training. We also provided training on productivity tools like Microsoft Word, Excel and PowerPoint, web technologies like search engines, and assistive technology.

Candidate Training

For teacher education candidates, we provided in-class training. The training included the use of productivity tools to develop web pages and electronic portfolios, as well as assistive technologies and strategies for using technology in teaching and learning. We have also provided them with hands on training on Project Learning Tree, and Projects Wet and Wild. We have ensured sustainability of most of our training activities by embedding them into regular classes. In most cases, the training was taken up by the faculty teaching the course. Most importantly, our goal was that these students will be taught by faculty who are trained in the use of technology.

Training Resources

To help insure that the trainees can carry the newly acquired knowledge beyond our training sessions, we found it necessary to provide them with resources that they can use on their own at their own pace. The resources were collected in the form of customized CD-ROMs. These included utilities, university developed resources, interactive tutorials, as well material they worked on during our training sessions. The CD-ROMs also include a direct link to the resource page on our project website. The content of the CD-ROMs was finalized at the end of our training sessions.

The software utilities incorporated in the CD-ROM include image and sound manipulation software, web authoring tools, text editors, web utilities, and teaching utilities. They are all freeware.

The university developed resources include step-by step tutorials on the use of various productivity tools as well as video of some of the training sessions that were conducted by the university's Information Technology Services. The step-by-step tutorials were provided in an Adobe Acrobat PDF format.

The interactive tutorials were developed by our project. Our strategy was to insure that they are easy to use and that they provide a gradual approach to the learning process. Additionally we wanted them to be interactive and to meet the needs of people of different learning styles and skill levels. The format used in the Interactive tutorials is adapted from the one used by the National Education Foundation's CyberLearning program [NEF.] It provides a simulated interactive and controlled environment of the procedure to be followed. The step-by-step instructions are provided in clearly labeled text boxes and as sound. Pointers are used along with the instructions to help guide the users through the various procedures. The controlled interactive simulated environment allows the trainees to try out the suggested steps without fearing errors and software malfunctions.

The teacher trainees were also provided with a CD-ROM of GLOBE related resources.

Conclusion

Most of the faculty, teachers, and students trained are appreciative of the training activities that we have conducted. They often express wishes for more training. Yet, they often remind us of the lack of adequate classroom facilities. Formal evaluation of our training activities is ongoing and will be reported later.

References

Britzman, D. (1991). "Practice makes practice: A critical study of learning to teach". Albany: State University of New York press.

GLOBE: Global Learning by Observations to Benefit the Environment, web site: <http://www.globe.gov>

Lortie, D. (1975). "Schoolteacher: A sociological study". Chicago: University of Chicago Press.

NEF, National Education Foundation, CyberLearning program. Example tutorials are available at the web site: <http://cyberlearning.org>

PLT: Project Learning Tree, web site: <http://www.plt.org>